Application Serial No. 10/696,104

Date: December 19, 2005

Response to Office Action dated October 19, 2005

Amendments to the Specification:

Please replace paragraph [0017] with the following paragraph:

An apparatus and method for protecting an inductive device, such as an [0017] electromagnet, from excessively high voltages resulting from an open circuit is described with reference to Figures 1-6. An open circuit of the inductive device as used herein refers to any circumstance under which the inductive device, when energized by a power source, is abruptly cut off from that source. Figure 1 is a simplified electrical schematic of one embodiment of the discharge device 10. The inductive device 12 is connected by conductors 14 to a variable or fixed DC supply voltage V with the indicated polarity. The discharge device 10 is connected by conductors 16 such that the discharge device 10 is in parallel with the inductive device 12. Thus, the discharge device 10 is in parallel with both the inductive device 12 and the variable DC supply voltage V. The discharge device 10 includes a spark gap 18 sealed in a spark chamber 20 filled with an inert gas. The spark gap 18 comprises two spaced electrode plates where one of the spaced electrodes is preferably adjustable. Connected in series with the spark gap 18 is a resistance 22. Here the resistance 22 includes two parallel resistors 22a, 22b, but the resistance 22 can broadly be any electrical device that absorbs and dissipates energy. A diode 24 is connected so that it normally opposes the flow of current, that is, the diode 24 is reversed-biased with respect to the polarity of the voltage V.

Please replace paragraph [0021] with the following paragraph:

Figure 2 shows a discharge device 30 according to the present invention in relationship with an electromagnet 32. The discharge device 30 is mounted on a crane 34 supporting a magnet controller 36. The magnet controller 36 is not shown in detail as the invention is operable with any commercially available magnet controllers controller that provide provides a voltage supply to energize and de-energize the electromagnet 32 in a controlled manner. A derrick 38 extends upward from the crane 34 and supports the electromagnet 32, here a lifting magnet, with a cable 40. The cable 40 comprises

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conductors for supplying power to the electromagnet 32 from the magnet controller 36 using the proper polarities. The discharge device 30 can be bolted or spot welded to the electromagnet 32 and is connected across the conductors of the cable 40 as previously discussed. One of skill in the art will recognize that other configurations for supporting the electromagnet 32 are contemplated. Hereinafter, the electromagnet will be referred to as the magnet 32 for simplicity.